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EXAMINER

SUMMONS, BARBARA

ART UNIT

PAPER NUMBER

2817

DATE MAILED: 05/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/745,677

Applicant(s)

Karanicolas

Examiner

Baulava Summors

Group Art Unit

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—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3(three) MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- ☒ Responsive to communication(s) filed on 4/30/03 (RCE + Amendment)
- ☐ This action is **FINAL**.
- ☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

- ☒ Claim(s) 1, 9-17, 21 & 22 is/are pending in the application.
- Of the above claim(s) _____ is/are withdrawn from consideration.
- ☒ Claim(s) 1, 17, 21 & 22 is/are allowed.
- ☒ Claim(s) 9-16 is/are rejected.
- ☐ Claim(s) _____ is/are objected to.
- ☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

- ☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on _____ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some* ☐ None of the:
- ☐ Certified copies of the priority documents have been received.
- ☐ Certified copies of the priority documents have been received in Application No. _____.
- ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____

Attachment(s)

- ☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____
- ☒ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Interview Summary, PTO-413
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Other _____

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DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR § 1.114, including the fee set forth in 37 CFR § 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 4/30/03 has been entered.

Withdrawn Claim Rejections - 35 USC §§ 102 and 103

2. Applicant's arguments received 4/30/03 have overcome: the rejection of claims 9, 10, and 13 under 35 U.S.C. § 102(e) as being anticipated by Williamson U.S. 6,194,973 because the Examiner agrees the "sources and drains of transistors MCX0 and MCX1" are not connected to the gate and drain of transistor M2" (see pg. 6 of the amendment received 4/30/03); and the 35 U.S.C. §§ 102(b) and 103(a) rejections of claims 1, 17, 21, and 22 based upon Hariton U.S. 5,926,064 (see reasons for allowable subject matter below).

Maintained Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. § 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or

(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 9 and 10 are rejected under 35 U.S.C. § 102(b) as being anticipated by Hariton U.S. 5,926,064 (of record) for reasons of record repeated, with respect to the claims remaining rejected, and with some elaboration, below.

Fig. 5 of Hariton discloses a device comprising: first and second FETs (302,303), each with a respective gate, source, and drain, and with the respective sources and drains of the first and second FETs being short-circuited and connected together to form a floating capacitor (see col. 2, lns. 51-59); and a third FET 505 having a gate, source, and drain, and wherein the drain and gate of FET 505 are connected to each other and to the drains and sources of FETs 302 and 303 via FET 506, such that all required portions are "connected" to each other.

Maintained and New Claim Rejections - 35 USC § 102/103 and § 103

5. The following is a quotation of 35 U.S.C. § 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claim 9 is rejected under 35 U.S.C. § 102(e) as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over Bazzani U.S. 6,087,896 in view of Millman Ph.D.

“Microelectronics Digital and Analog Circuits and Systems” page 237.

Fig. 3 of Bazzani discloses an op amp having a FET capacitor 14 (see col. 1, lns. 27-29), wherein the single FET capacitor 14 connected between nodes A and B is replaced with the two FET (14,59) structure of Fig. 9. Therefore, Bazzani discloses a device comprising: a first FET 14 and a second FET 59 with the respective sources and drains of the first and second FETs being connected together at node B; a third FET (not numbered, see the Examiner drawn box in Fig. 3) with a gate, source, and drain; and wherein the drain and gate of the third FET are also directly connected to node B and thereby directly connected to the sources the drains of the first and second FETs (14,59).

Note that Bazzani does not explicitly identify the source and drain of the third FET and the upper/non-gate terminal must inherently be either the source or the drain. Since FETs are bidirectional devices (see Millman pg. 237) one may consider Bazzani to disclose both the upper non-gate terminal of the third FET as the drain or as the source.

Alternatively, it would have been obvious to one of ordinary skill in the art at the time the invention was made, if the upper non-gate terminal of the third FET were the source, to have modified the device of Bazzani (Fig. 9 into Fig. 3), such that the upper/non-gate terminal of the third FET would have been the drain, because FETs are bidirectional devices such that their

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sources and drains would have been interchangeable as explicitly suggested by Millman (pg. 237), and as would have been known by one of ordinary skill in the art.

7. Claims 11 and 12 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Hariton U.S. 5,926,064 (of record) for reasons of record repeated below.

Hariton discloses the invention as discussed above, except for disclosing the third transistor being a bipolar transistor (BJT).

Nevertheless, as would have been well-known, BJTs are conventionally utilized in current mirrors.

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the art-recognized equivalent BJT current mirror in place of the FET current mirror of the Hariton reference because such a modification would have been considered a mere substitution of art-recognized equivalent current mirrors.

8. Claims 13-16 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Applicant's admitted prior art Fig. 2 and the description thereof in view of Hariton U.S. 5,926,064 (of record) for reasons of record repeated below.

As shown by Applicant's admitted prior art Fig. 2, a communication device including an amplifier output stage 206 shows a capacitor 208 connected there across but does not show the claimed FET capacitor.

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Nevertheless, as discussed above, the Hariton reference teaches a floating capacitor for use in an integrated circuit (see col. 1, lns. 5-8).

Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have substituted the floating capacitor of Hariton in place of the generic capacitor 208 in the communication device of the Applicant's admitted prior art Fig. 2, because such an obvious modification would have been the mere substitution of art-recognized equivalent capacitors which would have advantageously facilitated integration in a chip at a low cost as suggested by Hariton (see col. 1, lns. 15-23).

With respect to the BJT, the use thereof would have been obvious for the reasons noted in the immediately preceding rejection.

Allowable Subject Matter

9. Claims 1, 17, 21, and 22 are allowable over the prior art of record.

10. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record does not disclose or fairly suggest a device having two FETs and a bias transistor coupled to each other so that "the sources and drains" of the two FETs and the "gate (base) and drain (collector) of the bias transistor have a substantially same voltage potential, and the bias transistor has substantially zero DC bias current" (see each of claims 1, 17, 21, and 22, the last three lines thereof). Whereas the new art to Bazzani inherently discloses the same voltage potentials because all of the recited sources and drains and gate/base and drain/collector

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of the transistors are connected to the same node B, it cannot be determined that the bias transistor has a “substantially zero DC bias current” as required by the claims.

Regarding the withdrawn rejection of claims 1, 17, 21, and 22 based on Hariton, the Examiner agrees with Applicant’s argument that Hariton does not teach that “the gate and drain of bias transistor 505 is at the same voltage as the sources and drains of transistors 302 and 303” (see page 7, lns. 4-6 of the amendment received 4/30/03) due to the presence of intervening transistor 506.

Response to Arguments

11. The arguments filed 4/30/03 regarding the rejections based upon Williamson (of record) and the rejections of claims 1, 17, 21, and 22 based upon Hariton (of record), are persuasive, and the corresponding rejections have been withdrawn.

12. Applicant's arguments filed 4/30/03 regarding rejections of claims 9 and 10 based upon Hariton (of record), have been fully considered, but they are not persuasive.

Applicant argues that in Fig. 5 of Hariton, “the drain and gate of transistor 505 are not connected to the sources and drains of transistors 302 and 303” (see pg. 7, lns. 7-11 of the amendment received 4/30/03). This argument is not persuasive because the drain and gate of transistor 505 are connected to the sources and drains of transistors of 302 and 303 via transistor 506. It should be noted that the claim does not require the elements to be --directly-- connected, and the open claim language “comprising” does not preclude additional structure. The new

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rejection based upon Bazzani has been made because it does have a direct connection between the sources and drains of the first and second FETs and the drain and gate of the third FET as recited.

Applicant puts forth no further arguments regarding the claims rejected under § 103 based upon Hariton. Therefore, no further response by the Examiner is considered necessary at this time. It should be noted that the FET capacitor of Bazzani is also used in a communication device with an op-amp.

Conclusion

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Schmidt U.S. 5,949,295 discloses a resonant circuit that includes first and second transistors T_4 and T'_4 (Figs. 4 and 5) forming a capacitor (see e.g. claim 4) and a third bias transistor T'_{SB} (see col. 5, lns. 21-26) directly connected thereto as recited.

14. Any inquiry concerning this communication should be directed to Barbara Summons at telephone number (703) 308-4947, FAX no. (703) 308-7724, receptionist's no. (703) 308-0956, Supervisory Examiner Bob Pascal (703) 308-4909.



Barbara Summons
Primary Examiner
Art Unit 2817

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May 22, 2003